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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/899,410	07/23/1997	DEANE E. GALLOWAY		7052

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EXAMINER

DYE, RENA

ART UNIT	PAPER NUMBER
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3627

DATE MAILED: 02/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

08/899,410

Applicant(s)


GALLOWAY ET AL.

Examiner

Rena L. Dye

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11/3/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 22-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>56</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Request for Continued Examination*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114.

Applicant's submission filed on November 3, 2003 has been entered.

### *Claim Rejections - 35 USC § 102 & § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 22-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newsome (4,457,960) in view of Lai et al. (5,272,36).

Newsome teaches linear low density polyethylene (LLDPE) used in multiple layer molecularly oriented films (Abstract). The film includes a first barrier layer having two opposing surfaces wherein first and/or second pairs of layers are adhered. In preferred structures the first pair of layers comprises 70% to 100% EVA and the second pair of layers comprises 10% to 90% LLDPE. In an embodiment involving a partial reversal of roles, the first pair of layers comprises 50% to 100% LLDPE. The second and third layers, or barrier layer, may

comprise an ethylene vinyl acetate (EVA), and the fourth layer comprises 10% to 100% LLDPE (column 2, lines 40 to column 3, line 24). Newsome uses conventional LLDPE, wherein one commercially available material is DOWLEX (column 5, lines 45+). The barrier layer may be ethylene vinyl alcohol copolymer (column 3, lines 25-28). A substantial end use of the film is in heat sealable shrink bags for utilization particularly in packaging (column 3, lines 32-37). The thickness of each layer of the film is essentially the same as the same layer in conventional shrink films. By way of example in a typical film used to make the bag of Figures 1 and 2, the overall film thickness is 2.25 mils. Layers 14 and 18 are 0.4 mil, and layer 16 is 1.45 mils (column 4, lines 60-65).

Newsome does not teach using metallocene catalyzed polyethylenes, or polymers or copolymers formed by a polymerization reaction with a single site catalyst.

Lai et al. teaches a substantially linear polyethylene that has superior properties to conventional polyethylenes, wherein comparisons are made between their invention and DOWLEX 2054, a conventional LLDPE (see Examples 7-9). They also teach that the polymers of their invention are superior to conventional polyethylene polymers in terms of gloss, haze, dart impact, and clarity (see Examples 10-13).

Lai et al. teaches substantially linear polymers can be homopolymers of  $C_2$ - $C_{20}$  olefins, such as ethylene or polypropylene. The substantially linear polymers can also be interpolymers of ethylene with at least one of a  $C_3$ - $C_{20}$   $\alpha$ -olefins. Monomers usefully polymerized include, for example, ethylenically unsaturated monomers. Preferred monomers include  $C_2$ - $C_{10}$   $\alpha$ -olefins, especially ethylene, propylene, 1-butene, 1-hexene, and 1-octene (column 3, lines 25-47).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used substantially linear olefin polymers of the type taught by Lai et al. in place of the DOWLEX used in the films taught by Newsome, in order to have produced a film having higher gloss, lower haze, and better clarity.

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Although Newsome fails to expressly teach irradiation of the film, it is conventional to cross-link films in order to improve the abrasion resistance of the film. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have irradiated the film taught by Newsome in order to have cross-linked the layers and to have improved the abrasion resistance.

It would have been obvious to one having ordinary skill in the art to have varied the thickness of the layers based upon the desired degree of strength and flexibility. Since the Newsome reference teaches film layer thicknesses which are reasonably close to that which is claimed, varying the thickness of the film layers is deemed to be routine optimization and would have been obvious to one having ordinary skill in the art based upon the desired properties.

4. Claims 22-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newsome (4,457,960) in view of Schut "Enter a New Generation of Polyolefins" Nov. 1991, *Plastics Technology*, or Van Der Sanden "A New Family of Linear Ethylene Polymers With Enhanced Sealing Performance" February 1992.

Newsome has been discussed in the previous paragraph. Newsome does not teach using metallocene catalyzed polyethylenes, or polymers or copolymers formed by a polymerization reaction with a single site catalyst.

Schut, an Exxon trade journal, teaches a new line of linear low density polyolefins made using homogenous single site metallocene catalysts, wherein the polyolefins have a density of at least 0.90 g/cc. Furthermore, Schut teaches that EXXPOL EXACT-101 has a total impact strength of 107 in.-lb. These polyolefins have physical characteristics far superior to traditional polyolefins produced from conventional Ziegler/Natta catalysis. For example: metallocene catalyzed polyolefins have lower heat-seal initiation temperatures, higher strength (Dart impact results), and better clarity. The superior attributes of these metallocene catalyzed polyolefins are

further elaborated in Van der Sanden et al. (Pages 99-100); and they further teach that these polyolefins are a choice material in the production of heat sealable films. Finally, it should be noted that metallocene catalyzed polyolefins (propylene, 1-butene, 1-hexene, or 1-octene/ethylene copolymers) are commercially available from Dow in the form of "Affinity" or from Exxon in the form of "Exact". As discussed above Van der Sanden et al. and Schut teach that commercially available metallocene catalyzed LLDPE have physical properties far superior to that of analogous LLDPE formed by Ziegler-Natta catalysis.

It would have been obvious to one having ordinary skill in the art at the time of the invention to have used the commercially available metallocene catalyzed LLDPE of the type taught by Schut or Van der Sanden et al. in the laminate structure of Newsome to have produced a film with superior strength and performance.

Although Newsome fails to expressly teach irradiation of the film, it is conventional to cross-link films in order to improve the abrasion resistance of the film. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have irradiated the film taught by Newsome in order to have cross-linked the layers and to have improved the abrasion resistance.

It would have been obvious to one having ordinary skill in the art to have varied the thickness of the layers based upon the desired degree of strength and flexibility. Since the Newsome reference teaches film layer thicknesses which are reasonably close to that which is claimed, varying the thickness of the film layers is deemed to be routine optimization and would have been obvious to one having ordinary skill in the art based upon the desired properties.

It would have been obvious to one having ordinary skill in the art in view of the teachings of Schut or Van der Sanden et al. to have arrived at Applicant's claimed invention. Therefore, the claimed "ethylene alpha-olefin copolymer formed by a polymerization reaction in the presence of a single site catalyst would have been obvious to one having ordinary skill in the art.

Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955).

***Claim Rejection - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 22-31, 39-42 and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Ahlgren (US 5,604,043).

Ahlgren teaches a heat shrinkable thermoplastic film or bag containing at least one homogeneous ethylene alpha-olefin copolymer with long chain branching (Abstract). The resin produced using a metallocene catalyst system, which is characterized as having a single, stable chemical type rather than a Natta-Ziegler system (column 2, lines 36-40). As a consequence of the single site system afforded by metallocenes, ethylene/alpha-olefin copolymer resins can be

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produced with each polymer chain having virtually the same architecture (column 2, lines 63-67). Ahlgren teaches the improvement over Natta-Ziegler ethylene alpha-olefin copolymers, and specifically mentions the patent to *Newsome* (US 4,457,960).

The term ethylene alpha-olefin is intended to encompass copolymers of ethylene with an alpha-olefin and another comonomer (column 5, lines 28-31). The film layers may be formed by coextrusion (column 5, lines 55-57). The heat shrink film may be subject to irradiation (column 6, lines 29-31). The seal or and abuse layer may each contain a homogenous branched ethylene alpha-olefin either alone or in a blend with another polymeric material. Column 6, line 65 through column 7, line 24 lists the respective compositions of the seal, barrier and abuse layers that may be chosen. The barrier layer may include ethylene vinyl alcohol. Examples of materials appropriate for use in the seal layer include EVA, LLDPE, EAA, EMAA, homogenous linear ethylene alpha-olefins, and homogeneous branched ethylene alpha-olefins. The teachings of Ahlgren would include the recited film structure comprising a first barrier layer with second and third layers, wherein the first barrier layer is disposed between the second and third layers.

The homogeneous single site catalyzed copolymer of ethylene and alpha-olefin has from four to ten carbon atoms. Ahlgren further teaches the homogeneous ethylene alpha copolymer having an  $I_{10}/I_2$  greater than or equal to 5.63 and a  $M_w/M_n$ , less than or equal to  $(I_{10}/I_2) - 4.63$  (column 16).

7. Claims 32-38 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahlgren (US 5,604,043).

Ahlgren fails to explicitly teach the recited film thicknesses. It would have been obvious to one having ordinary skill in the art to have varied the thicknesses within the claimed ranges



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since Ahlgren specifically teaches the film used as a bag or packaging as recited in the present claims.

8. Claims 22-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newsome (US 4,457,960) in view of Ahlgren (US 5,604,043).

Newsome has been previously discussed above in paragraph no. 3 and fails to teach using metallocene catalyzed polyethylenes, or polymers or copolymers formed by a polymerization reaction with a single site catalyst.

Ahlgren has been previously discussed above in paragraph no. 7. Ahlgren specifically teaches the benefits of the taught single site metallocene ethylene/alpha-olefin copolymer resins over a Natta-Ziegler resin throughout the reference. Ahlgren specifically mentions the Newsome (US 4,457,960) patent and how the taught resin provides superior properties over the Natta-Ziegler resins. Ahlgren further teaches that metallocene catalyzed resins provide improved physical properties such as optics, low extractables and improved impact. Processing difficulties are avoided by introducing some limited long chain branching (column 4, lines 13-30). Therefore, it would have been obvious to one having ordinary skill in the art to have substituted the resin of Ahlgren for that taught by Newsome to have resulted in a film having improved or more superior properties.

It would have been obvious to one having ordinary skill in the art to have varied the thickness of the layers based upon the desired degree of strength and flexibility. Since the Newsome reference teaches film layer thicknesses which are reasonably close to that which is claimed, varying the thickness of the film layers is deemed to be routine optimization and would have been obvious to one having ordinary skill in the art based upon the desired properties.

***Double Patenting***

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 22-44 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 17,18,20 and 21 over copending Application No. 09/369,978. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims recited in the related patent application 09/369,978 further limit that which is recited in the present patent application. In other words, the present claims are broad enough to encompass that which is claimed in related application 09/369,978.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Response to Arguments***

11. In view of Applicant's filing of an RCE and prior to allowance of the present claims, the Examiner of record has reinstated the previous rejections of record. Applicant's arguments of record have been fully considered, but they are not persuasive. The Examiner's position in response to Applicant's arguments have been repeated as follows:

Applicant's arguments have been carefully considered but do not place the present claims in condition for allowance. Lai et al. specifically teaches that the linear olefin polymers are an improvement over that which is conventionally known in the art, and have several uses, *i.e.* fibers, films and molded parts. Therefore, although Newsome teaches a blend of a LDPE made from a conventional catalyst (Zeigler –Natta) with ethylene vinyl acetate copolymers, it would have been obvious to one having ordinary skill in the art to have substituted the LDPE of Lai made from a single site catalyst for the LDPE of Newsome. One having ordinary skill in the art would certainly expect a blend of the LDPE taught by Lai blended with ethylene vinyl acetate copolymer to have superior properties since Lai teaches the disclosed LDPE to be superior over conventional LDPEs in terms of glass, haze, dart impact and clarity.

With respect to the Schut and Van der Sanden references, it would have been obvious to one having ordinary skill in the art to have selected a linear low density polyolefin having known superior properties in making films. Therefore, it would have been obvious to one having ordinary skill in the art to have used the polyolefin or LDPE of Schut and Van der Sanden in place of the LDPE of Newsome to have provided a blended film with improved properties.

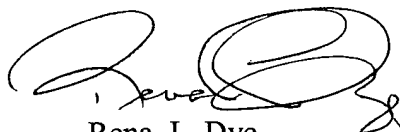
\*It is also noted that Applicant filed a Declaration under 37 C.F.R. 1.132 in the related patent application 09/369,978; however, a declaration was not filed in the present application.

\*It is also noted that Applicant did not file a terminal disclaimer in response to the obviousness-type double patenting rejection.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rena L. Dye whose telephone number is 703-308-4331. The examiner can normally be reached on Monday-Tuesday (part-time) 8:30 AM - 6:00 PM EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Olszewski can be reached on 703-308-5183. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Rena L. Dye', with a stylized flourish at the end.

Rena L. Dye  
Primary Examiner  
Art Unit 3627

R. Dye  
February 3, 2004